

Title (en)

Apparatus and method for bulge testing an article

Title (de)

System und Verfahren zur Durchführung von Wölbungstests an einem Gegenstand

Title (fr)

Système et procédé de tests par bombement d'un article

Publication

EP 1607731 A2 20051221 (EN)

Application

EP 05253053 A 20050518

Priority

GB 0413650 A 20040618

Abstract (en)

An apparatus (10) for bulge testing an article (12) comprises a pressure vessel (14) arranged to define a chamber (15), the pressure vessel (14) has a first aperture (28) and a second aperture (30), means to pressurise the chamber (15), means (19) to measure the deflection of the article (12), means (39) to measure the pressure in the pressure vessel (14) and means (18) to determine material properties of the article (12) using the measurements of pressure in the pressure vessel (12) and the measurements of deflection of the article (12). A piston (24) is arranged to move within the pressure vessel (14) and the chamber (15) is filled with a fluid. The means to pressurise the pressure vessel (14) comprises a gun (16) arranged to fire a projectile (36) to strike the piston (24) to produce a high pressure in the fluid in the chamber (15) in the pressure vessel (14) to deform an article (12) placed over the first aperture (28) in the pressure vessel (14) to seal the pressure vessel (14). The means (19) to measure deflection comprises a camera 48 and two mirrors (50,52) to produce a stereoscopic view of the article (10).

IPC 1-7

G01N 3/00

IPC 8 full level

G01N 3/00 (2006.01); **G01L 5/04** (2006.01); **G01N 3/12** (2006.01); **G01N 3/307** (2006.01); **G01N 3/313** (2006.01); **G01N 3/317** (2006.01); **G01N 3/02** (2006.01); **G01N 3/06** (2006.01)

CPC (source: EP US)

G01N 3/12 (2013.01 - EP US); **G01N 3/313** (2013.01 - EP US); **G01N 3/317** (2013.01 - EP US); **G01N 3/307** (2013.01 - EP US); **G01N 2203/001** (2013.01 - EP US); **G01N 2203/0048** (2013.01 - EP US); **G01N 2203/0232** (2013.01 - EP US); **G01N 2203/027** (2013.01 - EP US); **G01N 2203/0282** (2013.01 - EP US); **G01N 2203/0641** (2013.01 - EP US); **G01N 2203/0647** (2013.01 - EP US); **G01N 2203/0682** (2013.01 - EP US)

Cited by

CN113405756A; CN102175537A; CZ302741B6; CN106290016A; CN110104229A; WO2016196397A1

Designated contracting state (EPC)

DE FR GB

Designated extension state (EPC)

AL BA HR LV MK YU

DOCDB simple family (publication)

EP 1607731 A2 20051221; **EP 1607731 A3 20130515**; **EP 1607731 B1 20150722**; GB 0413650 D0 20040721; US 2005279162 A1 20051222; US 2007220966 A1 20070927; US 7409848 B2 20080812

DOCDB simple family (application)

EP 05253053 A 20050518; GB 0413650 A 20040618; US 13224505 A 20050519; US 72329307 A 20070319